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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,330	09/16/2003	Takashi Ohira	Q77492	9180

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WASHINGTON, DC 20037

EXAMINER
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TSOY, ELENA

ART UNIT	PAPER NUMBER
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1762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/662,330

Applicant(s)

OHIRA, TAKASHI

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/5/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Election/Restrictions***

Applicant's election of Group I, claim 1, in the reply filed on December 5, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

***Response to Amendment***

Amendment filed on December 5, 2006 has been entered. New claims 3-6 have been added. Claims 1-6 are pending in the application. Claim 2 is withdrawn from consideration as directed to a non-elected invention.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crast et al (US 6,165,564) in view of Jin et al (US 20020016226), further in view of Lokai et al (US 6319983), and further in view of Nealon et al (US 5,300,325).

The cited prior art is applied here for the reasons of record set forth in paragraph 6 of the Office Action mailed on 9/5/2006. As was discussed there, Nealon et al teach that a polyurethane top coat tightly adheres to an ionomeric cover of golf ball if a polyurethane top coat and an aqueous primer layer are co-cured (See Abstract; column 4, lines 52-54). Therefore, it would have

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been obvious to one of ordinary skill in the art at the time the invention was made to have co-cured a polyurethane top coat and an aqueous primer layer in Crast et al in view of Jin et al in view of Lokai et al with the expectation of providing the desired tight adherence of the polyurethane top coat to an ionomeric cover of golf ball since Nealon et al teach that a polyurethane top coat tightly adheres to an ionomeric cover of golf ball if a polyurethane top coat and an aqueous primer layer are co-cured, as required by Amendment of claim 1.

As to claim 3, As was discussed in the Office Action mailed on 9/5/2006, Jin et al teach that a solvent-free (See P36) UV-curable coating comprising urethane acrylate oligomers (See P24) having UV-curable acrylate double bond (See P23).

As to claim 4, It is the Examiner's position that introducing water-soluble groups such as carboxyl groups to a resin in a coating composition is a well known and conventionally used technique for converting a non-aqueous composition to a water based composition.

As to claim 5, Jin et al teach a solvent-free (See P36) UV-curable coating comprising urethane acrylate oligomers (See P24) having UV-curable acrylate double bond (See P23) and polyfunctional aziridine-based crosslinker (claimed ethyleneimine-based crosslinker) (See P14).

As to claim 6, Crast et al teach that UV-curable coating has thickness of 0.5 mils (12.7 microns). Jin et al teach that UV-curable coating composition (claimed primer) may have thickness in the range of 0.1-3.0 mils (2.54-76 microns). Obviously, the optimum values of the relevant thickness parameters of the primer (including those of claims 4 and 7) may be determined through routine experimentation in the absence of showing of criticality.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crast et al in view of Jin et al, further in view of Lokai et al, and further in view of Nealon et al, as was discussed above, and further in view of Sethachayanon (US 5089376).

The cited prior art is applied here for the same reasons as above. The cited prior art fails to teach that the aqueous resin is prepared by introducing carboxyl, amino or sulfonate groups.

Setthachayanon teaches that introducing carboxyl moiety into urethane (meth)acrylate polymer in a photocurable coating composition changes the nature of the urethane (meth)acrylate, making it soluble in aqueous alkali, but retaining the sensitivity of the compound to UV light (See column 3, lines 20-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formulated an aqueous photocurable coating composition of the cited prior art by introducing carboxyl moiety into urethane acrylate oligomer since Setthachayanon teaches that introducing carboxyl moiety into urethane (meth)acrylate polymer in a photocurable coating composition changes the nature of the urethane (meth)acrylate, making it soluble in aqueous alkali, but retaining the sensitivity of the compound to UV light.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hamada et al (US 6255382) is cited to show that ethyleneimine is aziridine (See column 1, lines 54-56).

Kaiya et al (US 4145501) teach that in order to prepare a film forming material for a water-soluble coating composition, it is necessary to introduce hydrophilic groups such as carboxyl, hydroxy, ether, amino and sulfonic acid groups into the molecular structure of the material (See column 1, lines 26-30).

***Response to Arguments***

9. Applicants' arguments filed December 5, 2006 have been fully considered but they are not persuasive.

Applicants argue that there is no motivation to combine Crast et al with Jin et al except for hindsight reasoning because Crast provide no indication that enhanced adhesion is needed. In fact, the very opposite is true. At column 4, lines 11-12, Crast teaches that its UV-curable coating may be applied to ionomeric covers. The only teaching or suggestion that the coatings of Crast may be deficient appears at page 1 of Applicants' disclosure.

The Examiner respectfully disagrees with this argument. In contrast to Applicants argument, Crast does teach a **primer** (See column 4, lines 14-15). Jin et al provides motivation of using his primer to obtain an enhanced adhesion to an ionomer substrate in golf balls. Therefore, one of ordinary skill in the art would be motivated would have reasonable expectation of success of using Jin's primer.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-142323. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy  
Primary Examiner  
Art Unit 1762

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January 9, 2007